CHAPTER - THREE

DESIGN OF THE STUDY AND THE TOOLS
# Chapter - Three

## Design of the Study and the Tools

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Introduction</td>
<td>64</td>
</tr>
<tr>
<td>3.2</td>
<td>Types of Research Study</td>
<td>64</td>
</tr>
<tr>
<td>3.2.1</td>
<td>Various types of research studies</td>
<td>66</td>
</tr>
<tr>
<td>3.2.2</td>
<td>Survey Research</td>
<td>69</td>
</tr>
<tr>
<td>3.3</td>
<td>Research Design</td>
<td>75</td>
</tr>
<tr>
<td>3.3.1</td>
<td>Stage-One</td>
<td>75</td>
</tr>
<tr>
<td>3.3.2</td>
<td>Stage-Two</td>
<td>76</td>
</tr>
<tr>
<td>3.3.3</td>
<td>Stage-Three</td>
<td>76</td>
</tr>
<tr>
<td>3.3.4</td>
<td>Stage-Four</td>
<td>76</td>
</tr>
<tr>
<td>3.3.5</td>
<td>Stage-Five</td>
<td>76</td>
</tr>
<tr>
<td>3.3.6</td>
<td>Stage-Six</td>
<td>77</td>
</tr>
<tr>
<td>3.4</td>
<td>Procedures Adopted</td>
<td>77</td>
</tr>
<tr>
<td>3.4.1</td>
<td>The Questionnaire</td>
<td>77</td>
</tr>
<tr>
<td>3.4.2</td>
<td>The Interview Format</td>
<td>78</td>
</tr>
<tr>
<td>3.4.2(i)</td>
<td>The Pilot Version</td>
<td>79</td>
</tr>
<tr>
<td>3.4.2(ii)</td>
<td>The Final Version</td>
<td>81</td>
</tr>
<tr>
<td>3.4.3</td>
<td>Sample Materials</td>
<td>82</td>
</tr>
<tr>
<td>3.5</td>
<td>Data Analysis</td>
<td>87</td>
</tr>
<tr>
<td>3.5.1</td>
<td>Statistical Measures</td>
<td>87</td>
</tr>
<tr>
<td>3.5.2</td>
<td>The Chi-Square Test</td>
<td>88</td>
</tr>
<tr>
<td>3.5.3</td>
<td>Computer Analysis</td>
<td>90</td>
</tr>
<tr>
<td>3.5.4</td>
<td>Visual Presentation</td>
<td>91</td>
</tr>
<tr>
<td>3.5.5</td>
<td>Qualitative Analysis</td>
<td>91</td>
</tr>
<tr>
<td>3.6</td>
<td>Conclusion</td>
<td>92</td>
</tr>
</tbody>
</table>
Chapter - Three

Design of the Study and the Tools

3.1 Introduction :

This chapter reviews various types of research designs and discusses the procedures adopted by the Investigator to design and produce the tools used in this study.

3.2 Types of Research Study :

The results obtained in a research work depend much upon the credibility of the methods used. The choice of inappropriate methods or procedures can invalidate research work (Hillway, 1969). Research Studies can be classified into two major segments:

- Descriptive research studies.

- Experimental research studies.

Descriptive research studies are broadly related with the
analysis of the relationships between non-manipulated variables. These kinds of research studies will lead to those conclusions or generalisations that have universal bearings. Descriptive research is used on the doctrine that if variable A is systematically associated with variable B, then the predictions for future are possible. This is the reason why Descriptive research is also known as correlational or experimental research. It can be quantitative or qualitative in nature. Quantitative research consists of those studies in which the data can be analysed in terms of numbers, whereas qualitative research deals scientifically with persons or events and so forth, without involving any kind of statistical analysis. Qualitative research seeks to determine how a particular person or a group of individuals belonging to a specific category and/or their behaviour is affected by a certain fact or variable or stimulus. So in a way qualitative data are collected in the form of words (field notes, audio recording, official records, views, and comments, diaries etc.) In short different types of descriptive research studies may approach the problem differently but they all lead to generalisation beyond the given sample or situation.

In an experimental research study the Investigator attempts to manipulate certain variable, stimuli or environmental condition with a view to observing how these may affect the condition or behaviour of the subjects. The Investigator must keep himself aware of these factors. After defining the problem, the researcher proposes a hypothesis on the basis of the experiment that has
been carried out. An experiment is carried out to establish a cause and effect relationship between a variable or factor and some observed results under predetermined conditions. The experimenter can deal with a single variable or multiple variables at the same time.

In an experimental research study, comparison holds the central part for discussion. In an experimental research study, generally, there are two groups of subjects: one that receives the treatment and the other that does not. The group that receives the treatment is referred to as "experimental group" and the other is referred to as "control group". These two groups are as nearly equated as possible in terms of age, sex, IQ level and other characteristics. The investigator holds the key for either accepting or rejecting the viewpoints presented by these groups.

3.2.1 Various types of research studies:

There are several types of research studies which focus on various aspects. These types can be listed as under:

(A) Ethnographic study:

Ethnography as a research method was developed by
anthropologists, who wished to study a society or some aspects of a culture exhaustively. But now, ethnographic research is not restricted to anthropology only. It has been used effectively in many a study like: social atmosphere of school, intellectual and emotional experiences to students, concerns and relations of staff and the administration, and classroom observations etc. Data on many variables are collected over an extended period of time in a naturalistic setting, usually through observations and interviews (Fraenkel and Wallen, 1993). Field work is vital to this method of research.

(B) **Action Research**:

Action research is more useful to novice-researchers, who are new to the field of research and who want to study an object, if possible, in depth. Cohen and Manion (1980 in Bell 1993) describe action research as

"essentially an on the spot procedure designed to deal with a concrete problem located in an immediate situation".

Action research is situational. Although the action research uses the scientific methods, but its central focus is on obtaining precise knowledge for a particular situation and purpose rather than on obtaining generalised scientific knowledge. In this kind
of research, modifications are possible, if the observations are kept constant through which, feedback can also be received. Action research chiefly relies upon the observation (participatory as well as non-participatory) and behavioural data (Cohen and Manion, 1994). Action research can be more useful for the subjects of social sciences, where the areas like; teaching methods, procedure for evaluation, in-service development of teachers, administration etc. need to be given more attention.

(C) Case Study:

The case study is extensive investigation of an individual unit i.e. of a single person, a group, a class, a school or a community. A 'Case Study', research can be carried out of any point of time keeping a particular objective in mind. Case study is conducted to "determine the variables and the relationship among the variables" that influence the behaviour of the subject/s under study. Although the 'Case study' research is carried out on the smaller basis, the researcher might try to establish generalisations for the wider population.

(D) Documentary Research:

The prime purpose of the documentary research is study
the events and situations of the past. It involves,

"Careful collection of available records relating to the subject under investigation and a thorough analysis of what these records disclose together with a synthesis of the conclusions to be derived from them"

(Hillway, 1963).

In documentary research, the data already exists in the form of records, documents, monuments, pictures, papers etc. This data can be categorised in two major groups: primary source and secondary source. Primary source, would contain the first hand information such as statements of somebody or eyewitness; secondary source would contain those documents which are merely description or scholarly writing of somebody, reporting about an incident which he had not witnessed personally. In such research programmes, authenticity of the material holds the central.

3.2.2 Survey Research:

The general aim of survey research is to obtain data from a considerable size of the representative sample of the population under study. Since the Investigator has to generalise his data, he has to be very careful in selecting the sample population - which is going to be representative of that group. The most
common types of instruments used in a survey research are the questionnaire and the interview schedule. Survey through sample materials is also an important tool. We shall discuss the questionnaire, the interview schedule and sample materials in some detail.

(A) The Questionnaire:

The questionnaire is a written substitute for the interview schedule. The questionnaire is rather 'impersonal', unlike the interview. But when, the questionnaire is properly framed and respondents really understand the purpose behind filling in the correct responses, then it can prove to be a very useful device for collecting the data. It would be up to the researcher to see that the respondents really follow the questions, and for that purpose, he might have to explain some of the items to some or many of them: in that respect, it would be desirable that no item is either ambiguous or too personal.

A good questionnaire must possess the following features:

(i) Instructions should be clear, direct and complete,

(ii) Items should be arranged in a rational order,
(iii) The questions should not be framed in such a way that the respondents might write only one word for the answer, because then the researcher would not be able to collect the information that he wanted to elicit.

(iv) Each question should deal with a single idea only.

(v) The researcher should be very objective in framing the questions because then only the respondents will become subjective, and

(vi) Wordings of the questions should remain clear and unambiguous.

It is up to the researcher to decide what kind of questionnaire he should use, keeping in mind, what kind of data he wants to collect. The questionnaire can be controlled-response or closed-form type and unrestricted or open-form type. Many questionnaires contain both kind of responses. The controlled-response will demand only 'Yes' or 'No' or any other single word response. It is easy to fill out such questionnaires. They are also easy for analysis and tabulation. On the other hand, open-form questions would require the respondents to response freely in their own words.
The validity and reliability of the questionnaire should be tested and verified. The questionnaire can be called a good one if it remains successful in asking the questions in the least ambiguous way. For this purpose, pilot testing within a small group of persons similar to those who will be used in the study can be useful. In order to improvise the questionnaire, the researcher should contact experts for second opinion. When the questionnaire remains successful in eliciting similar type of responses in similar conditions from different subjects then it can be said to be reliable.

(B) The Interview Schedule:

The interview is the most important research technique used in a survey research. Cohen and Manion (1994) define a research interview as follows:

"(The interview is) a two person conversation initiated by the interviewer for the specific purpose of obtaining research relevant information and focused by him on contact specified by research objectives of systematic description prediction or explanation."

In short we can say that interview is an oral questionnaire. The interview schedule has certain advantages which are:
(I) the interviewer can obtain in depth details by establishing a rapport with the respondents,

(II) the interviewer can explain explicitly the purpose behind the interview and if certain things are ambiguous or not clear, they can get solved readily,

(III) it is possible for the Interviewer to get the interview recorded.

(IV) it is possible for the interviewer to quote the words of the respondents, in order to make the interview more valid and reliable.

(V) the interview can serve as a primary means of gathering data or can also be used to follow up unexpected results or to validate other methods.

There are four types of interview:

(i) The Structured interview,

(ii) The Unstructured interview,
(iii) The Non-directive interview and

(iv) The Focused interview.

In 'the structured interview' contents and procedures are planned in advance. The sequencing of the questions is predetermined, thinking about the answer in advance. So in a way the structured interview schedule is almost an airtight compartment where there is no room for modification. In this respect 'the unstructured interview schedule, has greater flexibility and freedom. For this kind of interview the goals and objectives are set in advance but the wordings and the questions are not predetermined. In 'the non-directive', the respondents are allowed to express their feelings freely as they want. In this interview schedule, the interviewer has little control over the respondents. In comparison to this, 'the focused interview' is more controlled in a way that it focuses on subjects responses regarding a particular question under study. Data from such interview schedule, enables the interviewer to substantiate or reject the previously formed hypotheses.

The structured interview is very frequently used for eliciting the information in the fields of humanities, social science and education. Construction of the interview schedules is extremely important. Three kinds of items are used in the construction of schedules. They are:
(I) Fixed alternative responses where the respondents have to choose from two or more alternatives;

(II) Open ended responses, where 'frame of reference' is provided for responses but there is a minimum restriction on the answers and expressions; and

(III) Preference scales, which is a set of verbal items to which the interviewer responds by agreeing on a point or showing disagreement on a given scale of alternatives such as Strongly Agree, Undecided, Disagree and Strongly Disagree. Validity of such interview is greater when it is based upon a carefully designed structure and thus it ensures the elicitation of significant information.

3.3 Research Design:

The Investigator has tried to give a brief account of the research design of the present study. The present research work has been done in several stages. They are as under.

3.3.1 Stage-One :

The Investigator undertook an extensive review of the
related literature in the areas of ELT, Business English, MaterialsProduction and Educational Research.

3.3.2 Stage-Two :

The Investigator prepared a blueprint for improved instructional materials for the teaching of Business English after reviewing the present syllabus of F.Y.B.Com. level at Sardar Patel University.

3.3.3 Stage-Three :

The researcher produced sample materials of improved ELT materials.

3.3.4 Stage-Four :

The Investigator then carried out field trials of improved ELT materials and recorded the extent of classroom interaction.

3.3.5 Stage-Five :

The researcher conducted interviews of the learners with
the help of the interview format; subsequently the data was analysed.

3.3.6 Stage-Six:

The researcher reported the entire research work in the form of a thesis.

3.4 Procedures Adopted:

Since this research study aims at preparing and trying out the sample materials with the students at F.Y.B.Com. level, the investigator has tried to use the traditional tools in a manipulated manner. Given below are the procedures adopted for the selection and standardization of the tools for data collection.

The following procedures were adopted for piloting and finalizing of the items in the interview format.

3.4.1 The Questionnaire:

The present study chiefly deals with preparing new sample materials and trying it out with the students at F.Y.B.Com. level. This is the reason why, there was a little scope for this tool
of questionnaire to be used effectively. So after assessing all the aspects pertaining to questionnaire, the investigator decided not to use this tool either explicitly or implicitly for collecting the data for the present research study.

3.4.2 The Interview Format:

Since the presence of Questionnaire was nullified, the interview format had to play an important part for collecting the data successfully and accurately. It was found necessary by the Investigator to interview the respondents for an in-depth investigation regarding the preparation and trying out of the new sample materials. For this purpose, the Investigator decided to approach a randomly selected sample of respondents. Evidently the controlled response format of the questionnaire does not allow the respondents to put forward their ideas freely. Therefore the interview can become a more useful tool for the data collection regarding the sample materials.

This doesn't mean that the interview format will yield all the necessary information. On the contrary if the interview schedule is not properly structured then it can cause so many problems like: incomplete answers, difficulty in tabulating the data etc. Keeping these problems in mind, it was decided that the format of interview should follow a strict pattern as for as questions are concerned and not in the manner.
In line with the established proceedings regarding the interview format, the tool was validated by some of the ELT experts. And after that it was used for the trying out purpose with the group of one hundred students. Enough care was taken to include almost all the items regarding their habits of listening, speaking, reading and writing (see Appendix).

3.4.2 (i) The Pilot Version

The pilot version of the Interview Format consisted of two sections. The first section was devoted to Personal Data and the second section was devoted to questions which are to be answered by the respondents, where in 22 items in total are there (See Appendix). The first section of Interview Format had items like: Full Name, Sex, Age, Class, College, Results of the last exam: English subject paper and overall; medium of instructions at std. XII and at present; knowledge of the languages, how many members of the family can speak or use English language effectively. The remaining items focused on the various aspects related to the use of English language.

The pilot version of the interview format was tried out on a small group of twenty students. It was circulated amongst several ELT experts for comments and suggestions. Having given the pilot version of the Interview Format to the sample, and to the ELT experts, the Investigator found out that:
(a) the students could understand most of the items in the questionnaire without much difficulty,

(b) they needed some help in the items number: 2, 3, 14, 18, 21 and 22.

(c) In view of the Experts' comments and discussion with the sample, necessary changes were made in the pilot version to prepare the final version of the interview format.

(d) Some of the items number: 2, 4, 6, 9, 10, 15, 17, 20 were dropped from the final version of the Interview Format.

The comments and suggestions received from the ELT experts were studied and summarised by the investigator. The major points among these included:

(a) it was pointed out that the technical terminology used in the Interview Format may not be understood by the students and so, these kind of items should be excluded in the final draft,
(b) the number of items in the Interview Format may inhibit some learners and therefore it was advisable to reduce the number of questions to a reasonable level, and 

(c) some of the questions were open-ended questions and since these items were necessary to be kept in the final version, experts believed that they will be difficult in the tabulation. They advised that the responses to these questions should be reviewed in the Findings and Suggestions Chapter.

3.4.2(ii) The Final Version

The final version of Interview format consisted of two parts: (i) personal information questions and (ii) questions on the use of English language in various environments(see Appendix).

The interview format assured the subjects that their responses will be used for research purpose only and their identity shall not be revealed.

The Personal Data section of Interview Format elicited data on the following: Full Name, Sex, Age, Class, College, Results of the last exam: English subject paper and overall; medium of instructions at std. XII and at present; knowledge of the languages, how many members of the family can speak or use English Language effectively.
The items in the second section of Interview Format focused on the various aspects related to the use of English language. Some of the questions in the Interview Format are open-ended questions and these questions are aimed at collecting data regarding the personal use of English.

3.4.3 Sample Materials:

The Investigator had to prepare and tryout the sample materials with the students at F.Y.B.Com level of S.P.University on order to come to a conclusion regarding the effectiveness of the present text and the new materials. In order to do so, the Investigator had to choose those letters which were actually prescribed for them. Then the Investigator prepared the exercises in such a way, related to these letters that the students had to read the letter for a couple of times on order to answer the questions. Each letter was followed by two exercises. The first of them was a reading comprehension exercise and the second one was related to some kind of task.

(A) Task - I:

The first task was for comprehension. It was in the form of a letter for reading comprehension regarding the dispatch of substitute goods on approval. The objectives of this exercise were to:
(I) give the students practice of finding out the answers from the given passage,

(II) develope the student's ability for reading the passage keeping in mind a specific purpose,

(III) enhance the skills like: skimming, scanning in the students.

(B) Task - II:

The second task was multiple choice type, wherein the students had to select the appropriate answer from the options given. The objectives of this exercise were to:

(I) make the students read the letter once again in order to get the appropriate answer,

(II) make the students more familiar with the letter.

(C) Task - III:

The third task was for comprehension. It was in the form of a letter for reading comprehension related to Placing order for goods. The objectives of these exercises were to:
(I) give the students practice of finding out the answers from the given passage,

(II) develop the student's ability for reading the passage keeping in mind a specific purpose,

(III) enhance the skills like: skimming, scanning in the students.

(D) Task - IV:

The fourth task was making true or false statements. Wherein the students had to tick mark in the given box to say whether that particular statement was right or wrong, after reading the passage carefully. The objectives of this exercise were to:

(I) make the students read the letter once again in order to get the appropriate answer.

(II) make the students more familiar with the letter.

(E) Task - V:

The fifth task was for comprehension. It was in the form of a letter for reading comprehension related to an Inquiry
for prices, catalogue and terms of trade. The objectives of this exercise were to:

(I) give the students practice of finding out the answers from the given passage,

(II) develop the student's ability for reading the passage keeping in mind a specific purpose,

(III) enhance the skills like: skimming, scanning in the students.

(F) Task - VI:

The sixth task was a crossword puzzle, wherein the students had to guess appropriate words. The objectives of this exercise were to:

(I) make the students communicate with their partners in English, in order to find the correct answer,

(II) make the students aware of the explanation of some of the important commercial terms like: Quotation, Advertisement etc.

(III) generate interest in the students for reading because the words are already being used in the letter.
(G) Task - VII :

The seventh task was for comprehension. It was in the form of a letter for reading comprehension regarding the partial execution of order. The objectives of this exercise were to:

(I) give the students practice of finding out the answers from the given passage,

(II) develop the student's ability for reading the passage keeping in mind a specific purpose,

(III) enhance the skills like: skimming, scanning in the students.

(H) Task - VIII :

The eighth task was in the form of a passage, from which the students had to fill in the blanks given in the box, related to two personalities. The objectives of this exercise were to:

(I) develop the students ability for drawing comparison between two personalities,
(II) develop the students ability to summarise the information from the given data,

(III) give practice to the students for preparing short character sketch.

3.5 Data Analysis:

The following section reports on the procedures and statistical measures adopted to analyse the data obtained through the Interview Format. It also discusses the strategy of qualitative analysis adopted for the observation of the field trial of new tasks.

3.5.1 Statistical Measures:

The Investigator adopted such statistical measures as were suitable for the kind of data that were to be analysed. There were 100 respondents for the strategy related Interview Format. The data was asked in the form of 'YES' or 'NO' response to each of the questions on the use of a strategy related to the English's use. The responses were converted into quantitative form for the application of appropriate statistical measures.
There were Fourteen learner attributes that were studied in relation to the uses of English language in various perspectives. These were: Listening to English News, Attending any public or private lecture, Use English at Home, Use English in College, Use English when Travel, Regular Reader of English Magazine, Read News paper article in English, Interested in Reading English Book, Gone through any of the books prescribed for F.Y.B.Com, Writing Letters in English, Done any kind of Creative Writing, Contact people who speak English as their mother tongue, Reading Various English Magazine, Reading English Books and Purpose of English Learning. For comparison between the use of different strategy groups or categories and various attributes, the Investigator used the Chi-Square test of independence response, which is easy to use for larger population. Interpretation of the available data was based on Chi-square test value.

3.5.2 The Chi-Square Test:

The Chi-Square test represents a useful method of comparing experimentally obtained results with those to be expected theoretically on same hypothesis. The question for Chi-Square ($\chi^2$) is stated as follows:

$$\chi^2 = \frac{\sum [(Fo - Fe)^2]}{Fe}$$
in which $F_o = \text{frequency of occurrences of observation or experimentally determined facts;}$

$$\text{Fe} = \text{expected frequency of occurrence on some hypotheses}$$

The differences between observation and expected frequencies are squared and divided by the expected number in each case and the sum of these quotients is $\chi^2$. The more closely the observation result approximate to the expected, the smaller the Chi - Square and the closer the agreement between observation data and the hypotheses being tested contrariwise, the larger the Chi - Square the greater the probability of a real divergence of experimentally observations from expected results. To evaluate Chi - Square, we enter table E with the computed value of Chi - Square and the appropriate number of degrees of freedom. The number of difference $(r - 1)(c - 1)$ in which $r$ is the number of rows and $c$ is the number of columns in which the data are tabulated. From table E, we read $P$, the probability that the obtained $\chi^2$ is significant. Several illustrations of the Chi - Square test will clarify the discussion given above.
The formula for counting the data is given below.

<table>
<thead>
<tr>
<th>Response →</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>a</td>
<td>b</td>
<td>a + b</td>
</tr>
<tr>
<td>Girls</td>
<td>c</td>
<td>d</td>
<td>c + d</td>
</tr>
<tr>
<td>Total</td>
<td>a + c</td>
<td>b + d</td>
<td>N = a + b + c + d</td>
</tr>
</tbody>
</table>

(Table 3.1 Formula for counting the data)

\[ \chi^2_c = \frac{N(ad - bc)^2}{(a + b)(c + d)(a + c)(b + d)} \]

~ \( \chi^2_1 \) (Chi-square with one degree of freedom)

\[ \chi^2 = \chi^2_1, 0.05 \]

If \( \chi^2_c < \chi^2_1 \) then accept Ho at 5% level of significance (i.e. there is no association between gender and response), otherwise reject Ho (i.e. there is association between gender and response)

3.5.3 Computer Analysis:

Data on the uses of English were obtained through
interview format. A total of fourteen response items were analysed with the help of Microsoft Excel (Version-2000) programme which is an integral part of Microsoft Office, a widely used computer software. Microsoft Excel is specially used for statistical data analysis. The table and charts presented in chapter five were also created with the help of this programme.

3.5.4 Visual Presentation:

Available data was analysed to arrive at conclusions on the use of English by students at under graduate level in the Sardar Patel University in the state of Gujarat. For an easy and clear interpretation of the data, the Investigator has presented them in tabular form as well as in the form of pie charts and bar charts.

3.5.5 Qualitative Analysis:

The field trial of the new tasks generated classroom interactions that need to be interpreted through qualitative analysis. For this purpose, the Investigator adopted the strategy of participatory observation, i.e., the Investigator was both a participant and an observer of the entire process.
3.6 Conclusion:

Having discussed the research procedures adopted for the study in this chapter, we shall now proceed to describe the actual field trial in the next chapter.